Factors Influencing African-American Mothers' Concerns about Immunization Safety: A Summary of Focus Group Findings

Irene Shui, MPH; Allison Kennedy, MPH; Karen Wooten, MA; Benjamin Schwartz, MD; and Deborah Gust, PhD

Atlanta, Georgia

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Objective: To examine the vaccine safety concerns of African-American mothers who, despite concerns, have their children immunized.

Methods: Six focus groups of Atlanta-area African-American mothers who were very concerned about vaccine safety but whose children were fully vaccinated were conducted.

Results: Major factors influencing participants' concerns about immunizations included: lack of information and mistrust of the medical community and government. Factors that convinced parents to have their child immunized despite their concerns included social norms and/or laws supporting immunization and fear of the consequences of not immunizing. Suggestions given to reduce concerns included improving available information that addressed their concerns and provider-patient communication.

Conclusions: Addressing mothers' concerns about immunization is important both from an ethical perspective, in assuring that they are fully informed of the risks and benefits of immunizations, as well as from a practical one, in reducing the possibility that they will decide not to immunize their child. Changes in the childhood immunization process should be made to reduce parental concern about vaccine safety. Some changes that may be considered include improved provider communication about immunizations and additional tailored information about the necessity and safety of vaccines.

Key words: immunization safety ■ mistrust ■ parental concerns ■ African-American

Immunizations have drastically reduced childhood morbidity and mortality from vaccine-preventable disease. One outcome of this success is the majority of parents and healthcare providers are no longer exposed to the diseases that vaccines prevent, and there has been an increasing focus on vaccine safety.[1] Concerns about vaccine safety may negatively affect parents' decisions to immunize their children, resulting in decreased coverage and, potentially, disease outbreaks.[2,3] Several studies conclude that parental vaccine attitudes and beliefs affect immunization behaviors, such as late receipt of vaccines and under-immunization.[4-7] Controversy about vaccine safety has also been shown to cause concern even in those parents who are currently immunizing their children.[8]

African-American children have lower immunization coverage compared with other race groups.[6,9] There is also evidence that this disparity in coverage between African-American and white children is widening.[10] Reasons for this disparity are complex and not completely understood, but they are usually attributed to sociodemographic factors, such as poverty and access to care.[11,12] However, even when socioeconomic differences are considered, the disparity persists.[10] Currently, there is little research that specifically assesses African-American parents' immunization attitudes and concerns and how these attitudes and concerns influence decisions to have their children immunized. One study of mainly inner-city African-American parents in Baltimore found that parents believed vaccines to cause illness and that they did not consider immunization to be a high-priority parental responsibility.[13] Another study which also surveyed mainly African-American parents in inner city Baltimore found that parents' knowledge and attitudes about immunization did not explain their child's immunization status as much as sociodemographic characteristics.[11] However, both of these

"African-American" will refer to non-Hispanic African-American race throughout the paper and "white" will refer to non-Hispanic white race throughout the paper.

studies were set in a single metropolitan area and were done more than a decade ago when vaccine safety concerns may have been less prominent.

Recent preliminary analyses of the National Immunization Survey-Knowledge Attitudes and Practices module[14] revealed that a greater proportion of African-American parents sampled reported being very concerned about childhood vaccine safety compared with white parents (64% vs. 19%, respectively; $p<0.05$) (CDC, unpublished data). However, further analysis showed that this high level of concern among African-American parents did not translate into lower rates of immunization; only 7% of African-American parents with high levels of concern had a child who was underimmunized compared with 21% of African-American parents who did not report a high level of concern ($p<0.05$) (CDC, unpublished data).

The reasons this high level of concern over immunization safety is present among African-American parents who are getting their children immunized remain unclear. Although these parents are currently having their children immunized, it is important to understand and address their concerns in order to prevent these parents or other parents with similar concerns from ceasing to immunize. Raithatha et al.[8] conceptualize the decisions parents make about having their child immunized through a vaccine risk threshold (Figure 1). They found that vaccine risk acceptability was affected by a number of factors, including not only parental perceived susceptibility to infection but also parental attitudes to the immunization process and their trust in the risk managers [government/healthcare provider(s) (HCPs)]. When parents' overall attitudes about the "risk unacceptability" of a vaccine move above a theoretical threshold they will cease to immunize. They discuss how controversy in the United Kingdom over the safety of measles-mumps-rubella vaccine (MMR) may have triggered a reappraisal of risk, leading many parents to move above the threshold level and cease immunizing their children.

Thus, we conducted this focus group study to discover the reasons African-American mothers had a high level of concern about childhood vaccines and to understand why they had their children immunized despite their concerns. As in this study, focus groups are often used to provide insight about the meaning and interpretation of quantitative survey results.[15,16]

Table 1. Focus Group Participant Sample Demographics

Sample Demographics (N=53)	
Age	*n (%)*
<25	8 (15%)
25-34	29 (55%)
35+	16 (30%)
Education	
Missing	2 (4%)
High school	8 (15%)
Some college	16 (30%)
College	21 (40%)
Graduate school	6 (11%)
Family Income	
$0–$30,000	19 (36%)
$30,001–$50,000	13 (25%)
$50,001–$75,000	5 (9%)
$75,001+	16 (30%)

METHODS

Sample

A total of 53 African-American mothers were recruited using convenience sampling to participate in six Atlanta-area focus groups September to October 2003. Each group had 8–10 participants. Table 1 presents demographic characteristics of participants. Mothers' ages ranged 18–40 years, with the majority (55%) of the sample aged 25–34 years. About half (51%) of the participants had a college education or higher. Recruitment occurred at daycares, churches and "mom's groups" in three counties (Gwinnett, Fulton and DeKalb). Participants were included in the study if they had at least one child aged 19–35 months who was up-to-date on all recommended immunizations (with provider documentation) and if they indicated on the screening form that they were very concerned about the safety of immunizations (responding "5" on a five-point scale ranging from "not at all concerned" to "very concerned"). Mothers who worked in healthcare or health research were excluded.

Procedure

A female African-American moderator conducted the focus group sessions in locations convenient to the participants. Each session lasted approximately 1.5 hours, and participants were free to leave the focus groups at any time. The study was explained to parents, and written informed consent was obtained. Childcare was available onsite, and participants received a nominal fee as reimbursement for their time.

Interview Guide

The moderator facilitated the discussion by following a semistructured interview guide that was designed to elicit specific concerns that mothers had about immunization, why they had these concerns and what would reduce them, and to determine why they were still immunizing their children despite their concerns. Participants were also encouraged to speak freely about other issues related to immuniza-

tion that the guide did not cover.

The interview guide was based on Health Belief Model[17] and the Theory of Reasoned Action.[18] The Health Belief Model suggests that a person's behavior will be based on their perceptions of the risks and benefits to that behavior. Additional "cues to action," such as internal or external triggers, can also affect the behavior. Questions in the interview guide focused on the perceived necessity of vaccines and the perceived risks of vaccinating or not vaccinating their children. The guide also contained questions about cues to action, such as their relationship with their HCPs or their sources of immunization information. The Theory of Reasoned Action asserts that the most important determinant of behavior is a person's behavioral intention. Behavioral intentions are based on one's attitude toward performing the behavior and the influence of the subjective norm (what other people think about the behavior). Participants were asked to explain their concerns about immunization behavior and how their decisions to immunize their children were affected by social norms, such as immunization requirements. Participants were also asked what would reduce their concerns about immunization. Table 2 lists the topics covered by the guide and the corresponding discussion points.

Thematic Analysis

Each focus group discussion was audiotaped and transcribed. Transcripts were entered into NVivo,[19] a computer program used to assist in the analysis of text-based data. Transcripts were read repeatedly by three team members and coded to identify emergent themes. The coding process was iterative, and recurrent themes were identified across the groups. After independent coding resulted in a 73% interrater reliability, the three team members met to come to a consensus on the content and frequency of each theme. Themes were then organized by topic area, and representative quotations for each theme were selected.

RESULTS

Reasons for Concerns

Factors influencing mothers' concerns included doubts about the safety and necessity of vaccines, mistrust of the medical community and lack of information (Table 3).

Concerns about Vaccine Safety and Necessity. Fear of and/or experiences with adverse reactions fueled many concerns about immunization safety. Most mothers were extremely upset about the many relatively common side effects, such as swelling, lumps in the legs, rash and severe crying and pain that their children had experienced. A few mothers had children who had experienced more severe reactions, such as seizures. Hearing about purported adverse effects of vaccines, such as autism, also created safety concerns in some mothers. Finally, because immunization programs have been successful in reducing vaccine-preventable disease, many mothers are no longer familiar with the diseases that immunizations prevent. Mothers remarked that they hadn't "heard of or seen in ages" many of the vaccine-preventable diseases. This lack of familiarity may have led some mothers to believe that many of the diseases that their children were being vaccinated against were not a serious problem. Other mothers thought that children were getting "too many vaccines" and that vaccines for less severe diseases that were not life threatening, such as the chicken pox, were not necessary.

Mistrust. Mistrust of the medical community and government was also prevalent among participants. Many did not consider their HCPs to be partners in the welfare of their children and believed that providers did not always act in their best interests. Knowledge of the Tuskegee Syphilis Study and fear of being experimented on by the government contributed to some mothers' worries about the vaccine safety. This fear of experimentation was evident in the majority of participants'

Table 2. Topics Covered in the Focus Group Interview Guide

Topics	Discussion Points
Reasons for concerns	• Safety and necessity of vaccines • What factors cause you to be concerned about immunizations (e.g., lack of trust of medical community or healthcare providers, relationship with your health care provider)? • What are your sources of information about immunizations?
Reasons they immunized despite concerns	• Why are you getting your child immunized despite your concerns (e.g., immunization laws, necessity of immunizations, relationship with your healthcare provider)?
What will reduce concerns	• What are your suggestions to reduce your concerns about immunizations?

desire to know more about vaccine ingredients. Mothers remarked that no one ever told them what chemicals or active ingredients are actually in the shot. Some participants also believed that African-American children were likely to receive lower-quality shots than white children. Other dimensions of mistrust stemmed from beliefs that potential for financial gain could influence the way they were treated by their HCPs.

Lack of Information. The majority of mothers felt uneducated and underinformed about immunizations. When asked why they were so concerned about having their children immunized, many mothers said they were simply lacking enough knowledge about vaccines to make them comfortable with their decision to immunize. Some mothers seemed to lack an accurate perception of what the actual risks and benefits of vaccination were. One woman remarked, "I mean, what happens if you don't get the shots?" Another said that it would be useful if someone could explain "what the result of not getting an immunization is."

Poor communication with their HCPs was tied to mothers' lack of knowledge about immunizations. Concerns about adverse reactions and the necessity of vaccines could also be attributed to a lack of parental education about the safety and necessity of immunization. Several mothers expressed a need for better communication to assuage their concerns. Criticisms ranged from not having any of their questions answered to not being able to understand their provider's medical terminology.

Also related to poor communication and lack of information was that a number of participants expressed concern about the process of immunization. Mothers were uncomfortable about their children "getting so many shots at one time" and wanted explanations about why shots were given at specific times and more than once. Recent vaccine shortages also sent conflicting messages about the importance of following the immunization schedule when mothers would bring their children in for a vaccination and not be able to get it.

Reasons Mothers Had Their Children Immunized despite Concerns

Social norms and/or laws supporting immunization and fear of the consequences of not immunizing were major factors that influenced mothers to have their children immunized despite their concerns (Table 4).

Social Norms and Laws. The majority of participants perceived immunization to be a "required" and/or "expected practice" in society. Mothers felt as if they "had no choice" and were "forced" to immunize because of school or daycare regulations. When

Figure 1. Conceptualization of a vaccine risk threshold—adapted from Raithatha et al.[8] Shifts in parental vaccine concerns could lead to more of the population refusing to be vaccinated. Shaded areas indicate proportion of population above the "risk threshold" who refuse vaccination.

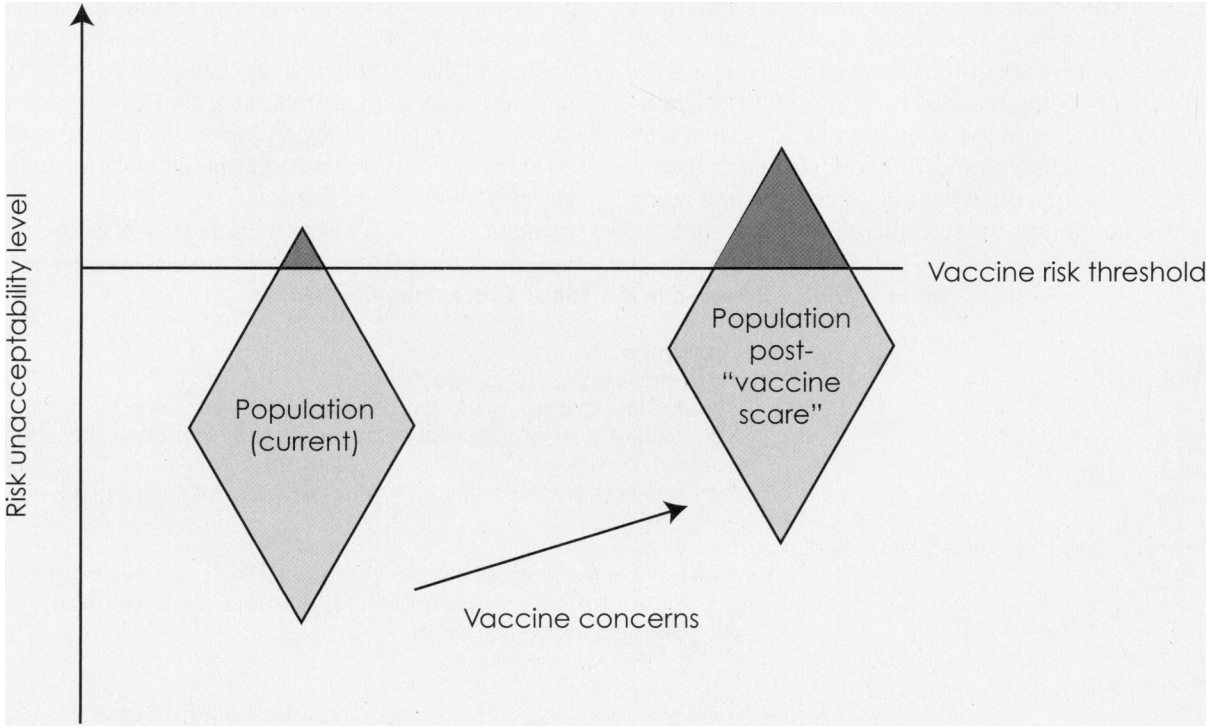

Table 3. Reasons for Concerns

Safety and Necessity

Experience with reactions
"I do fear the reactions, the side effects...those lumps in their legs or fevers and all of that. I think there should be an alternative."

Purported adverse events
"[After my son got his shot]...I watched him for a whole year because...I wanted to make sure that he wasn't going to have autism or anything."

"My biggest concern was when I started her on the shots that they get when they're 18 months [was that they] can cause autism so I actually delayed my daughter [from] getting that shot because I was afraid something like that would happen."

Lack of necessity
"I mean so many of the things that we are being vaccinated against I haven't heard of or seen in years, are they still really necessary?"

"...but something like the chicken pox is not going to kill you. If you were dealing with something polio then yes, but I think that the medical field is getting to the point where they think more is better and I think we need to revert back to less is more."

Mistrust

Fear of experimentation
"That [Tuskegee] always sticks in my mind. That you really don't know what's happening and here these people were guinea pigs and I just don't want my children to be part of that."

Questionable ingredients
"I want to know how much in the shot is actually other stuff...because who knows what the government could be giving us."

"They give you all these papers on the shots your child got...but they never tell you what exactly is inside the shot."

Lower-quality vaccines for African Americans
"Are they [African-American children] getting the same shots as the Caucasian children are getting from the Caucasian doctors?"

"I don't trust them. They might try out the black shot on you."

Financial gain
"I don't trust them [doctors]. How do I know [they're not] just telling me this so I can get these shots so [they] can get their money."

Lack of information

General lack of knowledge
"I can be honest, I don't know everything that they're getting because I don't even know what all the little letters mean."

"I don't feel like I'm educated at all when it comes to these shots."

Poor communication with HCP
"I have asked my doctor questions, but she doesn't answer."

"I think healthcare providers are not informing patients and sometimes when you raise too many questions you can see the impatience of doctors not really wanting to answer."

"Don't talk to me in doctor terms. I didn't go to medical school. Just talk to me in layman terms and let me know what's going on with my baby. I think that's more of a reason why I don't have a trust factor."

Complexity of immunization schedule
"...you give your child the immunization and then [in] two more months it's the same thing again...What happened to the first one? What's the reason to have the vaccination this time, this time, this time, when you can get it in one time"

"Why do we have to keep coming back, getting the same shot? I only get the flu shot once a year...why do you have to get hepatitis B three times when one time should work?"

Conflicting messages due to vaccine shortages
"They ran out of MMRs and they were supposed to call and reschedule but they never really did...I was kind of concerned because if it's so important to get done, why don't they have enough for the babies to get?"

asked why they were still having their children immunized despite their high level of concern, the majority of mothers responded: "Because of school", "It's a requirement", "It's the American way", "It's so expected and it's part of what you have to do." Some mothers also expressed the idea that without school laws people might not choose to have their children vaccinated.

Fear of Not Immunizing. To a lesser extent, fear of the consequences of their child not being immunized was also identified as a factor that prompted some mothers to immunize. Mothers said they would feel guilty for "not protecting" their children if they caught a vaccine-preventable disease. For example, one mother said, "I don't think I can gamble on my child's life like that [by not immunizing]." Interestingly, several mothers believed that the United States was relatively free of vaccine-preventable diseases and emphasized that immunizations were important for protection from diseases that still existed in "foreign" countries or that were brought into the United States by "immigrants".

Reducing Concerns

Suggestions mothers had to reduce their concerns were mainly to provide more information tailored to the issues that they were concerned about and for improved communication with their HCPs to help them understand this information (Table 5).

Information Availability. One main reason mothers gave for their concerns was that little information about immunizations was provided to them. Not having access to information may have contributed to mothers feeling as if they "lacked control" during the immunization process. Mothers stated that getting information from a trusted source would make them feel more "empowered" and comfortable with making "informed decisions" about immunization. Mothers wanted information that addressed their concerns—information explaining the "side effects", the "ingredients", the "importance" of immunizations and "how to treat adverse events". Most mothers suggested that the information be available at their child's HCPs office. Additionally, mothers who had received information emphasized that the majority of the time they did not receive this information until the actual immunization visit, when they did not have time to focus on the materials. They suggested that the material be given out multiple times before their child was due for a vaccination.

Improved Provider–Patient Communication. Along with making information available to mothers, good provider–patient communication was also an essential component to addressing their concerns. Mothers wanted a feeling that their HCPs were willing to take the time to "help them" through the process in a way that they could easily understand. Again, mothers wanted information before their child's immunization visit so that they could ask their HCPs "educated questions" and have a more useful discussion about any concerns they might have about immunizations.

Table 4. Reasons Mothers Immunized Despite Concerns

Social Norms and Laws
School and daycare requirements
"Well, based on the research I've done they're not necessary. We just do it because we're told to."
"...really you almost feel like you're forced to get these because they can't get in school. They can't do anything so you're sitting there and you're like okay if I don't do this it's a catch 22 unless you want to home school."
"I'd be willing to bet that a great majority of people get their children immunized strictly for school. If the school said tomorrow that your child does not need to be vaccinated then I think you would see a huge decline"
"I was just doing it initially because that's how she's going to get into daycare. I was just doing it because society said let's do it, let's do it. But now I'm not too sure."
Fear of the Consequences of not Immunizing
Protection from 'foreign' disease
"[I get my children immunized] because I would like to be able to visit a foreign country and I know that some of those foreign countries carry a lot of diseases and I would like to know that my child is sheltered from the diseases there."
"I think they [immunizations] are necessary...when you have a lot of different people coming into this country...if it were just us then we probably wouldn't have to worry."
"...especially now, [when] there are lots of people coming from different countries, maybe countries where old school diseases are still killing people. So you've got to protect your kids [by immunizing them]."

DISCUSSION

In our study of African-American mothers, concern over immunization was related to a number of factors, including: lack of knowledge and control over the immunization process, lack of trust in the medical community and experiencing adverse reactions and/or hearing about purported adverse effects of vaccines. Reasons mothers had their children immunized despite concerns included social norms and/or laws supporting vaccination and fear of the consequences of not immunizing. Suggestions mothers had for reducing their concerns included improved access to information that addressed their concerns and improved provider–patient communication.

Referring to Raithatha's[8] concept of a risk threshold for immunization (Figure 1), in our study, societal norms and school/daycare immunization laws played key roles in holding participants at a subthreshold level. However, these laws may no longer keep all parents below this theoretical threshold should another factor, such as an additional vaccine safety scare (e.g., from a personal experience, heard about through the media, etc.) come into play. Additionally, normative pressure from society may be decreasing as the public becomes less supportive of immunization laws—suggested by the increase in the number of states offering philosophical exemptions.[20,21] Thus, it is important to both identify and address factors underlying parental vaccine safety concerns in order to prevent parents from shifting to a position above the risk unacceptability threshold where they will cease to have their children immunized.

Access to adequate information has been shown to affect patient outcomes in a number of preventive health choices and treatment decisions, including immunizations.[22-27] Because mothers did not consider themselves informed about immunization, they may have felt a lack of control over the process. This phenomenon has been described by the Theory of Planned Behavior in which perceived control—the resources and power to perform a behavior—is an important predictor of successful completion of a behavior.[28,29] Likewise, studies of patients with cancer and other chronic diseases have shown that providing information to patients keeps them engaged and gives them a sense of perceived control in the health promotion decision-making process.[22-24,30,31] This control increases the likelihood that these patients will participate in preventive care and believe in the efficacy of therapy, reduces levels of emotional distress from treatment and encourages adherence to prescribed therapies.[22-24,30,31] Patients appreciate having written information even when they believe they have little choice or a passive role in medical decision-making, such as the case of immunization.[23,32] Our study confirms these findings; that is, the perception of personal control over one's health is an important factor among African-American women.[33]

African-American mistrust of the medical community has been described in the literature.[34,35] Our finding that some focus group participants did not consider their HCPs to be their allies is consistent with other studies.[35,36] Fears of experimentation led to many mothers worried about the quality of immunizations and their chemical make-up. Mistrust regarding immunization may be influenced by past abuses and racism, but this study shows that mistrust was also related to lack of information about vaccines, vaccine ingredients and quality assurance as well as poor provider–patient communication.

Table 5. Ways to Reduce Concern

Information Availability
General need for information
"It [information] empowers you. It makes you feel like you have some control. We don't have a lot of control over these vaccination issues [but] if you [could] have that information and that relationship [with your provider] then you feel like you have some control and you can make wise decisions"
More optimum timing of distribution
"When [your child is] called in and getting ready to get the shots you're flustered with worrying about how to comfort the child...you're not thinking about trying to read that information at the time. You need it ahead of time."
"I'd [like the information] beforehand so I can be prepared for my questions [to my doctor]."
Improved Provider–Patient Communication
Healthcare providers treat parents like partners
"There should be more information that's given by the doctors which would show a concern on their part. Basically showing we're here trying to help you."
"I'm not a medical professional. I'm a mom. [HCPs] need to...give me more information so that I can ask an intelligent question...at least for the medical professionals [need] to slow down...Slow down when you're handling my child and slow down when you're giving me the information about my child."

Recommendations

This study suggests that addressing mothers' concerns will involve improving both the information available to mothers as well as provider-patient communication (Table 6). Concerns which stemmed from experiences with relatively minor reactions to vaccines or hearing about purported reactions, such as autism, could have been reduced if mothers were better informed about these issues. In addition, further education and information available about the diseases vaccines prevent, the continued necessity of vaccines, vaccine ingredients and the vaccine process would give mothers more perceived control over the immunization process. Our study and others have indicated that providing this information in advance of the actual vaccination visit is essential for mothers to be able to digest the material and discuss it with their providers.[32,37,38] HCPs should play a major role in disseminating this information and ensuring that mothers understand the benefits and risks for each vaccine. Studies have indicated that parents consider the health professional to be the most important source of information regarding immunization[39,40] and that trust in one's provider is associated with use of recommended preventive services.[41] Additionally, patients are less likely to avoid treatment when they feel that their HCP will take the time to listen to their concerns.[42] Our findings reinforce the importance of information dissemination and emphasize that good communication with a HCP can help ease apprehensions about immunization.[43] This sentiment is echoed by Corbie-Smith et al.,[35] who suggest that an ongoing process of engagement, dialog and feedback must be established over multiple interactions with HCPs in order to counteract and prevent mistrust. Indeed, having an established relationship and good communication with a HCP have been shown to predict improved trust and delivery of preventive services.[44]

Both the American College of Physicians in its position paper on racial and ethnic disparities in healthcare[45] and the National Vaccine Advisory Committee (NVAC) in its standards for child and adolescent immunization practices[46] indicate that clear communication between patients and providers is important to improving services. NVAC recommends that "HCPs should allow sufficient time with parents...to discuss the benefits of vaccines, the diseases they prevent, any known risks from vaccines, the immunization schedule and the need to receive vaccines at the recommended ages." Also recommended is that HCPs review written material with parents and address questions and concerns. Finally, they recommend that HCPs encourage parents to inform them of any adverse events and explain to parents how to obtain medical care, if necessary.

Establishing improved provider–patient relationships to facilitate information exchange is also important because conflicting messages from the medical community may minimize the perceived importance of the vaccines. For example, vaccine shortages sent conflicting messages to mothers who, on one hand, were told the importance of timely immunization, but, on the other hand, were told that they had to delay the vaccine due to a shortage. Due to poor communication, such as lack of explanation for the shortages, mothers were confused by the situation and questioned the importance of a vaccine that had to be delayed because of insufficient supply.

Table 6. Recommendations

To improve overall knowledge about vaccine risks and benefits

1) Tailored educational materials should be made available to mothers. Topics that should be included in these materials to address concerns include:
   - Adverse events following immunization; how to treat them; how to report them
   - Description of the diseases that vaccines prevent; also reinforcing that these diseases exist not only in other parts of the world, but also in the United States
   - Purported adverse events, such as autism
   - Immunization schedule; why vaccines are given multiple times; why it's important to immunize on time
2) HCPs should distribute and discuss these materials at a visit prior to vaccination. This could be during prenatal care, or during an early pediatric preventive care visit.

To improve trust regarding vaccination safety

1) Educational materials should address the following topics:
   - Testing and quality assurance of vaccinations
   - Chemical make-up of vaccines; active and inactive ingredients
2) HCPs should attempt to build mothers' confidence and trust in immunizations by openly addressing their questions and concerns

Limitations

There are inherent limitations to using a qualitative method, such as focus groups, and the results may not be generalizable to a larger population. The results are used to gain insight and understanding into the nature of a problem rather than to provide statistical inference. Although we believe that the number of focus groups conducted was sufficient to reach theoretical saturation (where little new information would be provided with the addition of another group),[16,47] the study was limited to three Atlanta-area counties, and participants were selected using convenience sampling. In addition, because focus groups were not stratified by income or education levels and there were no comparison groups, we were unable to ascertain if there were differences related to these demographics. Despite these limitations, we gained important insights into the specific immunization concerns of African-American mothers and the factors affecting their concerns about immunizations. From these findings, we plan on developing a number of future studies, including a national survey to validate the findings and studies to test both new tailored parental educational materials as well as the optimum timing of distribution of parental immunization materials.

CONCLUSIONS

Addressing mothers' concerns about immunization is important both from an ethical perspective, in assuring that they are fully informed of the risks and benefits of immunizations, as well as from a practical one, in reducing the possibility that they will decide not to immunize their child. Moreover, as familiarity with vaccine-preventable diseases decreases, while that with adverse events increases, more parents may question whether they should immunize their children despite their concerns. Mothers in our focus group emphasized that they would like more information provided to them at an earlier stage as well as improved provider– patient communication. These results suggest a need to make the strategy of immunization delivery into more of a partnership between parents and providers. For example, actively addressing parental concerns about adverse events, confusion with immunization schedules and mistrust by making parents feel involved in the immunization decision-making process could increase confidence in and strengthen support for vaccines. In the case of certain populations, one way to do this may be to focus on building parental trust and empowerment through an emphasis on communication and tailored information provision. This will require that HCPs and immunization programs work together to develop and deliver interventions that include parents as active partners in the immunization process, rather than their traditional role as passive recipients of a legal mandate.

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